Hein-Werner

PUSHMASTER

PUSH AND PULL

REMOTE CONTROL HYDRAULIC JACKS AND EQUIPMENT

for • BODY REPAIR • MAINTENANCE • PRODUCTION • CONSTRUCTION • RESCUE

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CATALOG NO. 16

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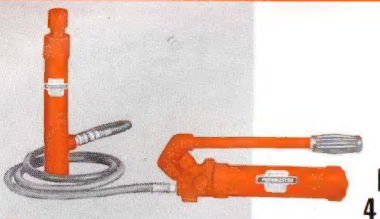
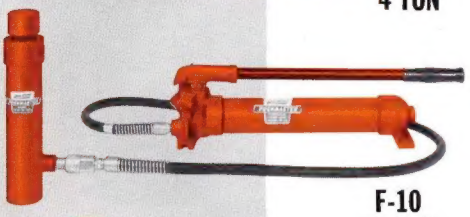
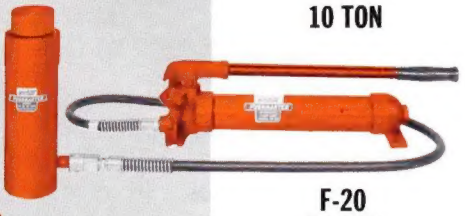


F-4
4 TON

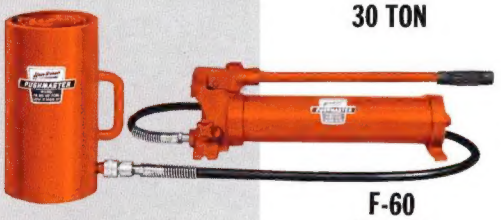


F-10
10 TON



F-20
20 TON

F-30
30 TON



F-60
60 TON

REMOTE CONTROL JACKS 4 TO 60 TONS

Compact, easy operating Pushmaster Jacks provide concentrated hydraulic power for a multitude of lifting, moving, bending, clamping, spreading, leveling or pressing jobs. All models feature detachable quick couplers, positive ram travel stops, overload safety valve. Two stage pump pistons in 30 and 60 ton models permit fast load contact and automatically change over to high pressure, low effort operation.

AIR-HYDRAULIC SETS

4, 10 and 20 ton models are also available with air-hydraulic pump to provide faster, effortless ram action with precise control. Hose is equipped with quick coupler to easily detach and connect to additional rams.

F-20A
20 TON

Selection specifications on complete Pushmaster Jacks are shown below:

PUSHMASTER JACK SPECIFICATIONS

Model	Tons Cap.	Closed Ram Ht.	Ram Stroke	Extended Ram Ht.	Pump No.	Ram No.	Hose No. (6' Long)	Ram Retract	Shpg. Wt. Lbs.
F-4	4	10½"	5"	15½"	FP-4	FR-410	F-4120	Spring	13
F-4.5	4	4¾"	2⅞"	7⅝"	FP-4	FR-4.5-1	F-4120	Hand	9
*F-4A	4	10½"	5"	15½"	FP-25	FR-410	F-10120	Spring	18
F-10	10	11¾"	6"	17¾"	FP-10-1	FR-10	F-10120	Spring	28
*F-10A	10	11¾"	6"	17¾"	FP-25	FR-10	F-10120	Spring	26
F-10.5	10	4½"	2¼"	6¾"	FP-10-1	FR-10.5-1	F-10120	Spring	22
F-10.16	10	15¾"	10"	25¾"	FP-10-1	FR-10.16	F-10120	Spring	33
*F-10.16A	10	15¾"	10"	25¾"	FP-25	FR-10.16	F-10120	Spring	31
F-20	20	11½"	5"	16½"	FP-10-1	FR-20	F-10120	Spring	43
*F-20A	20	11½"	5"	16½"	FP-25	FR-20	F-10120	Spring	41
F-20.19	20	19½"	13"	32½"	FP-30-1	FR-20.19	F-10120	Spring	60
F-30	30	10½"	6"	16½"	FP-30-1	FR-30	F-10120	Spring	58
F-30.5	30	4¾"	2¼"	7"	FP-10-1	FR-30.5-1	F-10120	Hand	32
F-60	60	11"	6"	17"	FP-60-1	FR-60	F-10120	Spring	105

* Equipped with Air-Hydraulic Pump.

STANDARD RAMS 4 TO 60 TONS

FR-4.10 4 TON | FR-4.5-1 4 TON | FR-10.5-1 10 TON | FR-10.16 10 TON | FR-10 10 TON | FR-20 20 TON | FR-20.19 20 TON | FR-30.5-1 30 TON | FR-30 30 TON | FR-60 60 TON

Pushmaster Rams feature positive overtravel stops, bronze guides with large bearing surfaces, ground ram plungers, highly polished cylinder walls and long wearing packings. Threaded ram connections on 4, 10 and 20 ton are replaceable. All rams furnished with ram cap and ram half of quick coupler.

STANDARD RAM SPECIFICATIONS

Model	Tons Cap.	Closed Height	Ram Travel	Extended Height	Outside Dia.	Ram Head Thread	Ram Collar Thread	Base Thread	Oil Cap. in Cu. In.	Eff. Ram Area	P.S.I. at Cap.	Ram Retraction	Wt. Lbs.
FR-4.5-1	4	4¾"	2⅞"	7⅝"	1⅝"	.....	.....	.....	2.6	1.2	6518	Hand	2½
FR-4.10	4	10½"	5"	15½"	1⅝"	¾" N.P.T.	1⅝"-16	¾" N.P.T.	6.1	1.2	6518	Spring	5
FR-10	10	11¾"	6"	17¾"	2¼"	1¼" N.P.T.	2¼"-14	1¼" N.P.T.	12	2.0	9643	Spring	11
FR-10.5-1	10	4½"	2¼"	6¾"	2¼"	1¼" N.P.T.	2¼"-14	.....	5	2.0	9643	Spring	5
FR-10.16	10	15¾"	10"	25¾"	2¼"	1¼" N.P.T.	2¼"-14	1¼" N.P.T.	20	2.0	9643	Spring	15
FR-20	20	11½"	5"	16½"	3⅜"	2" N.P.T.	3⅝"-12	2" N.P.T.	22	4.4	9029	Spring	23
FR-20.19	20	19½"	13"	32½"	3⅜"	2" N.P.T.	3⅝"-12	2" N.P.T.	57	4.4	9029	Spring	40
FR-30	30	10½"	6"	16½"	4"	.....	.....	.....	42	7.0	8488	Spring	29
FR-30.5-1	30	4¾"	2¼"	7"	3¾"	.....	.....	.....	15	6.5	9250	Hand	14
FR-60	60	11"	6"	17"	5¼"	.....	.....	.....	75	12.5	9549	Spring	57

HOLLOW RAMS . . . . 10 TO 60 TONS

HR-10 10 TON | HR-20 20 TON | HR-30 30 TON | HR-60 60 TON

Versatile Hein-Werner hollow rams exert pushing or pulling force for a wide range of applications. Used with puller attachments they save valuable time in removing and installing bearings, gears, wheels and other jobs.

HR-10 is equipped with cap, return spring and coupler. 20 ton and larger rams have mounting holes, internal ram return spring and are furnished complete with coupler, ram cap, threaded and smooth inserts.

HOLLOW RAM SPECIFICATIONS

Model	Tons Cap.	Closed Height	Stroke	Outside Diameter	Center Hole Dia.	Eff. Ram Area Sq. Inches	Mounting Hole Span & Thd. Size	Lbs. Net Weight
HR-10	10	5¼"	2 1/16"	2⅝"	⅝"	2.76	—	7
HR-20	20	6 3/16"	2 1/16"	3¾"	1 1/16"	4.73	2⅝" 5/16"-18	15
HR-30	30	7"	2½"	4⅜"	1 5/16"	7.22	3" ⅜"-16	21
HR-60	60	9⅛"	3½"	6¼"	2⅛"	13.67	4¾" ½"-13	56

HAND PUMPS

FP-4 A compact pump designed to power 4 ton Models FR-4.5-1, FR-4.10 Rams and AA-446 Hydraulic Spreader. Equipped with threaded handle and overload safety valve.

FP-10-1 Recommended for use with standard Ram Models FR-10, FR-10.5, FR-10.16, FR-20, FR-30.5 and hollow ram Models HR-10, HR-20 and HR-30. Has large base feet for extra stability, threaded handle and overload safety valve.

FP-30-1 Designed for use with FR-20.19, FR-30 and HR-60 Rams.

FP-60-1 Has extra reservoir capacity to power heavy-duty FR-60 Ram.

Both FP-30-1 and FP-60-1 pumps feature two stage pistons to extend rams rapidly for quicker load contact. Large piston then cuts out automatically. Both are safety valve equipped. Threaded handles may be used in horizontal or vertical position and have handle locks for easy, balanced carrying.

FP-4

FP-10-1

FP-30-1

FP-60-1

HAND PUMP SPECIFICATIONS

Model	P.S.I.	Usable Cap. Cu. In.	Pump Piston Dia.	Pump Stroke	Displacement Cu. In.	Hose Conn.	Length Overall	Handle Length	Wt. Lbs.
FP-4	7,000	14	3/8"	7/8"	.097	1/4"	14"	12 1/2"	6
FP-10-1	10,000	37	7/16"	1"	.150	3/8"	21"	16"	13
FP-30-1	10,000	91	Large 1 3/8" Small 1/2"	1"	Large 1.5 Small .2	3/8"	19 1/4"	19"	22
FP-60-1	10,000	117	Large 1 3/8" Small 1/2"	1"	Large 1.5 Small .2	3/8"	23 1/4"	23 1/2"	24

AIR HYDRAULIC PUMP

FP-25 Smooth and effortless, this pump extends rams quickly and automatically with air line pressure of 100 to 120 P.S.I. Provides instant, controlled touch action and retains pressure until released, even if air supply is disconnected.

Quiet and efficient, the FP-25 has ample oil capacity to fully extend Pushmaster 4 ton, all standard or long 10 ton and standard length 20 ton rams. Develops up to 10,000 P.S.I. and is protected with hydraulic pressure overload valve. Ratio of hydraulic P.S.I. to air line P.S.I. is 100 to 1.

FP-25H Includes F-10120C Hose with FC-3H coupler and AR-4 reducer adapter for coupling to 4 ton rams.

FP-25

AR-4

FP-25H

AIR-HYDRAULIC PUMP SPECIFICATIONS

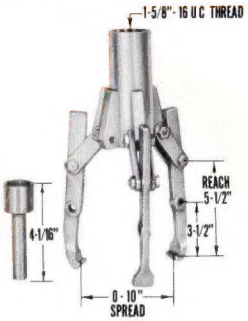
Model	P. S. I. at Cap.	Oil Cap. Cu. In.	Piston Stroke	Shipping Wt. Lbs.	Delivery at 120 lbs. air pressure Hydraulic Pressure	Delivery at 120 lbs. air pressure Oil Delivery In Cu. In. Min.
FP-25&H	10,000	33	1"	14	0 5,000 PSI 10,000 PSI	45 17 1/2 7 1/2

4 TON REPAIR KITS

Connects directly to hose with coupler. Opens to 3¾".

1 TON

AA-446 HYD. SPREADER

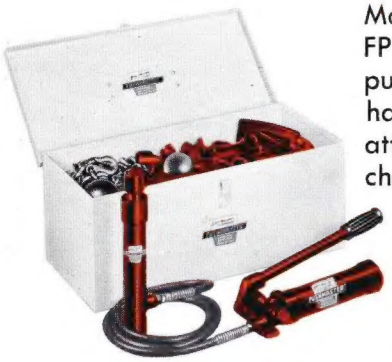


P-43G 4 TON HYD. PULLER

C-2S. . .4 TON JacKit

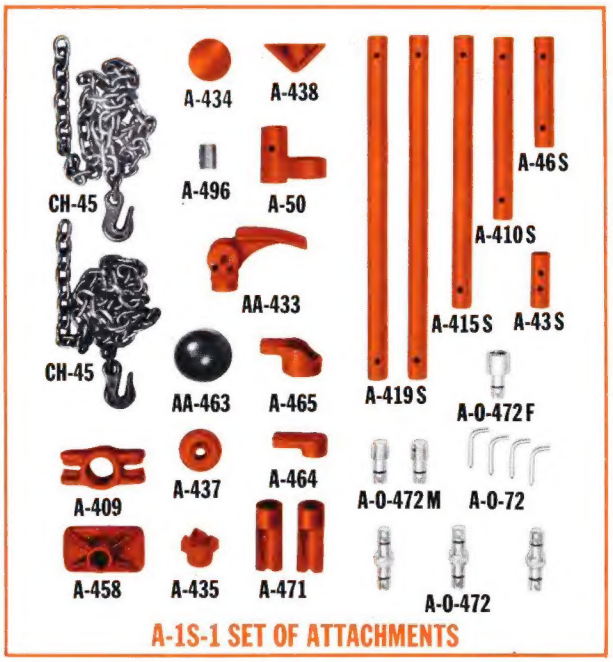
C-2S JacKit includes Model F-4 4 ton Jack with Quick-Coupler and Ram cap, A-1S-1 set of attachments with Quick-Set tubing and B-4 metal chest. Chest is 20" long, 9-3/4" wide and 7" high. Quick-Set tubing permits set-ups in seconds to cut down job time and increase shop profits.

C-2SA JacKit includes Model F-4A Jack with FP-25H air-hydraulic pump in place of FP-4 hand pump, A-1S-1 attachments and B-4 chest.



Easy to Figure:

F-4	F-4A
A-1S-1	A-1S-1
B-4	B-4
= C2S	= C2SA



A-1S-1 SET OF ATTACHMENTS

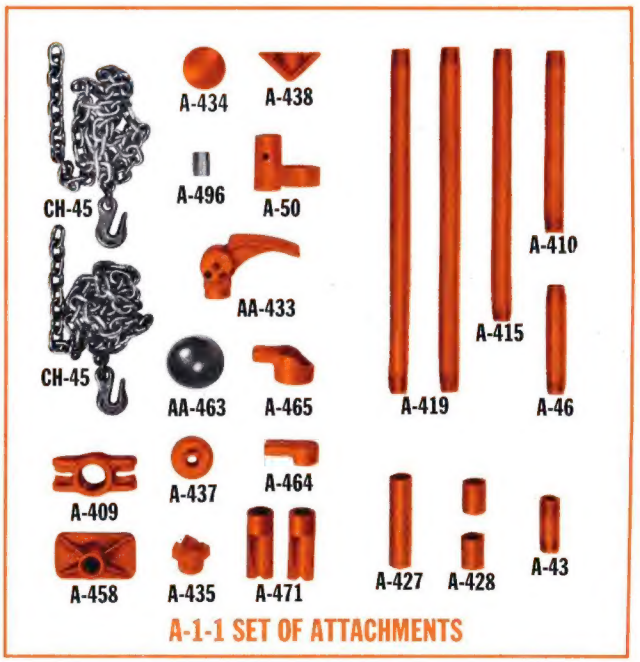
C-2. . .4 TON JacKit

C-2 JacKit includes F-4 4 ton Jack with Quick-Coupler and ram cap, A-1-1 set of attachments with threaded tubing and B-4 metal chest. The A-1-1 set of attachments is exactly the same as A-1S-1 except it includes threaded rather than Quick-Set tubing.

C-2A JacKit includes F-4A Jack with FP-25H air-hydraulic pump instead of F-4 with hand pump, A-1-1 attachments with threaded tubing and B-4 chest.

Easy to Figure:

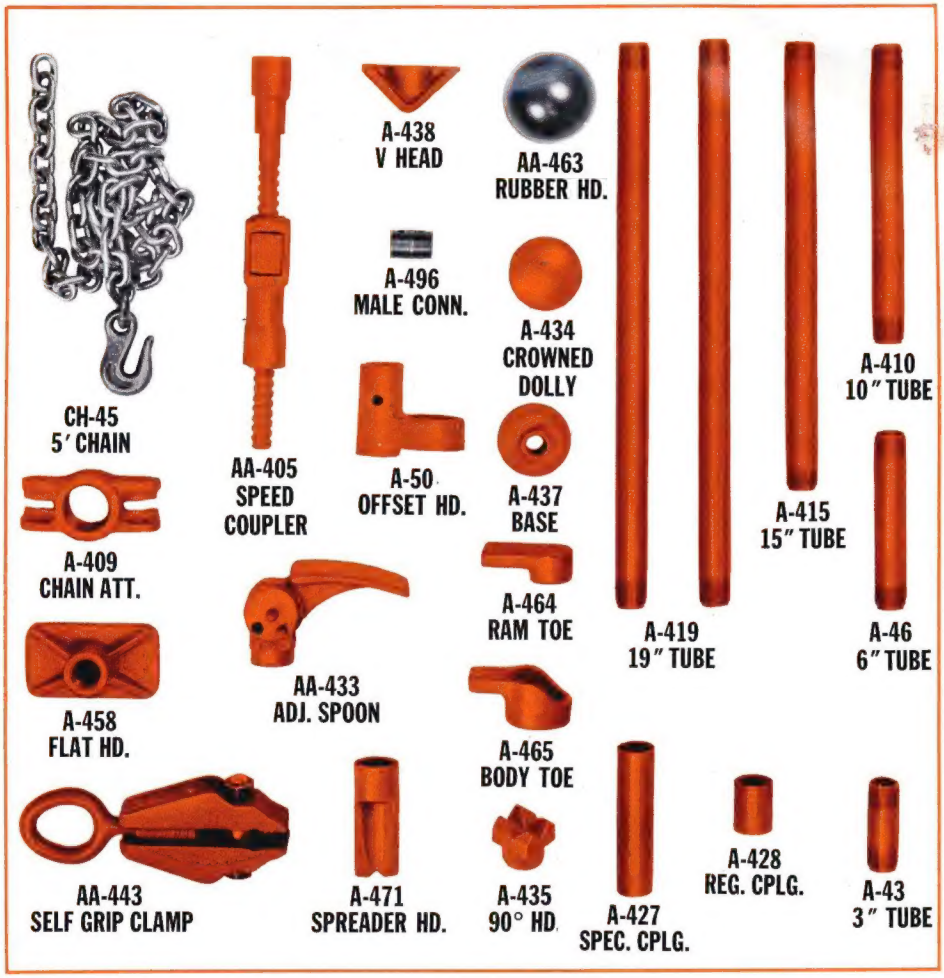
F-4	F-4A
A-1-1	A-1-1
B-4	B-4
= C-2	= C2A

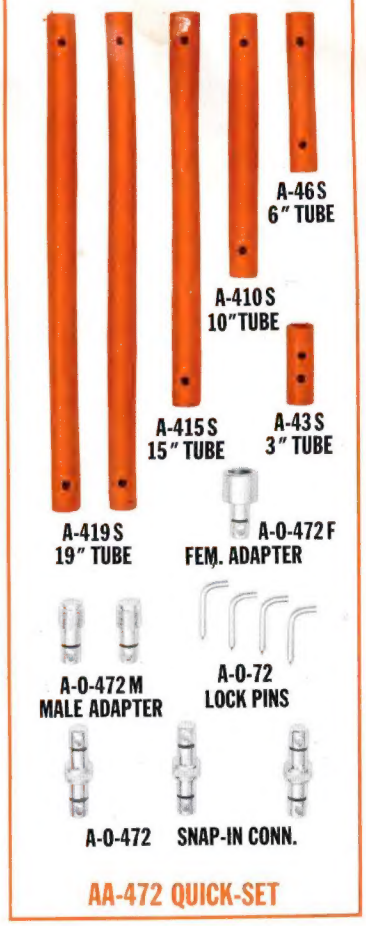


A-1-1 SET OF ATTACHMENTS

4 TON ATTACHMENTS

AA-472 set includes all parts pictured below. A-O-472 connectors snap in to either end of tubing to save setup time and give extra support at junction points.

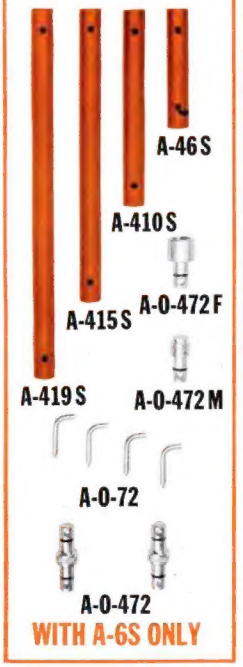




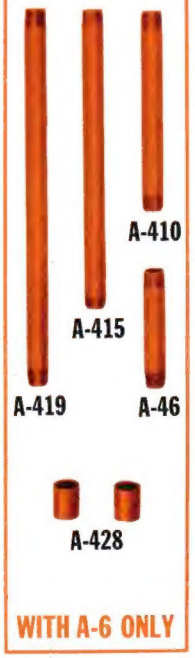
AA-472 QUICK-SET

C-6S . . . 4 TON STARTER JacKit

WITH A-6 & A-6S



WITH A-6S ONLY



WITH A-6 ONLY

C-6S JacKit includes F-4 Jack with Quick-Coupler and ram cap plus A-6S set of attachments and Quick-Set tubing shown at left. A real economy package of most often used attachments and time saving Quick-Set tubing. Provides the essentials at a small investment and additional attachments can be added later as desired.

C-6 JacKit includes F-4 Jack and A-6 set of attachments with threaded tubing shown at left.

Easy to Figure:

F-4	F-4
A-6S	A-6
= C-6S	= C-6

10 TON REPAIR KITS

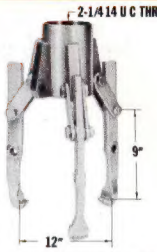
F-10

F-10A

Connects directly to hose with coupler. Opens to 3¾".

AA-1048 HYD. SPREADER

1 TON



P-103G 10 TON HYD. PULLER

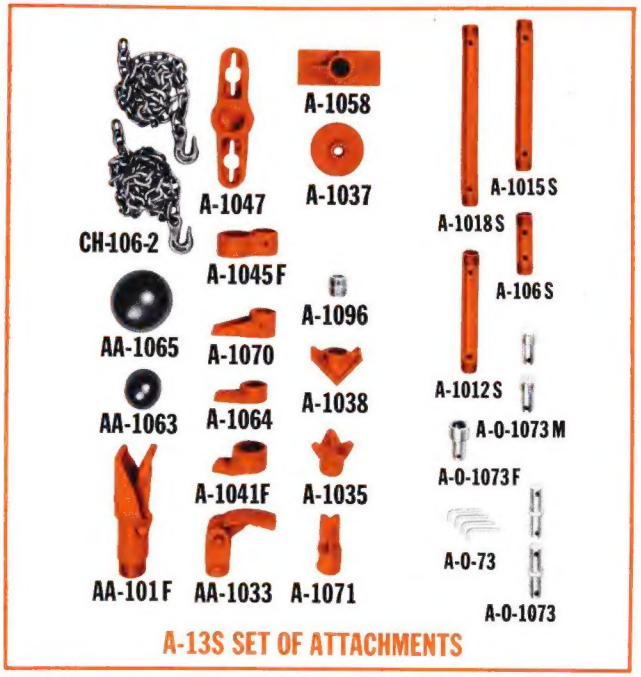
C-13S . . . 10 TON JacKit

C-13S JacKit includes F-10 10 ton Jack with Quick-Coupler and ram cap, A-13S set of attachments with Quick-Set tubing and B-10 metal stand. Stand is heavy gauge sheet steel 33" high, 18" wide and 30" long. Quick-Set tubing assures fast setups to reduce job time and increase shop profits.

C-13SA JacKit includes Model F-10A with FP-25H air-hydraulic pump in place of F-10 with hand pump, A-13S attachments and B-10 stand.

Easy to Figure:

F-10	F-10A
A-13S	A-13S
B-10	B-10
= C-13S	= C-13SA



A-13S SET OF ATTACHMENTS

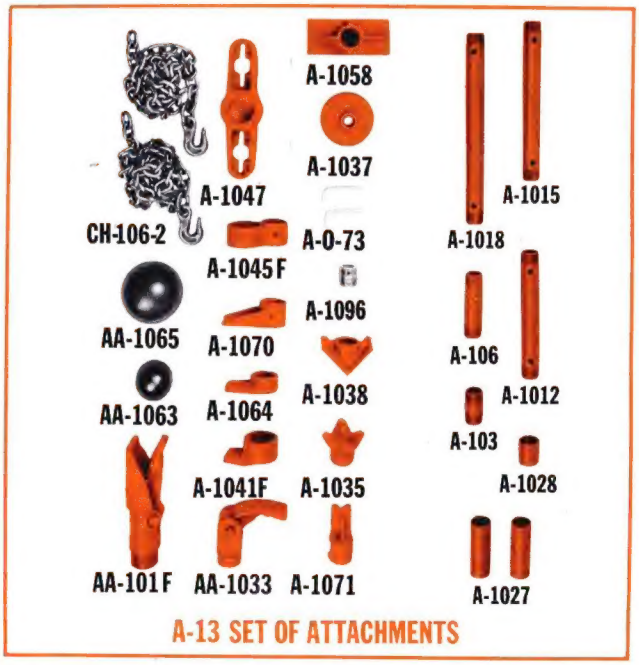
C-13 . . . 10 TON JacKit

C-13 JacKit includes F-10 10 ton Jack with Quick-Coupler and ram cap, A-13 set of attachments with threaded tubing and B-10 stand. The A-13 set of attachments is exactly the same as A-13S except it contains threaded rather than Quick-Set tubing.

C-13A JacKit includes F-10A Jack with FP-25H air-hydraulic pump instead of FP-10 hand pump, A-13 set of attachments with threaded tubing and B-10 stand.

Easy to Figure:

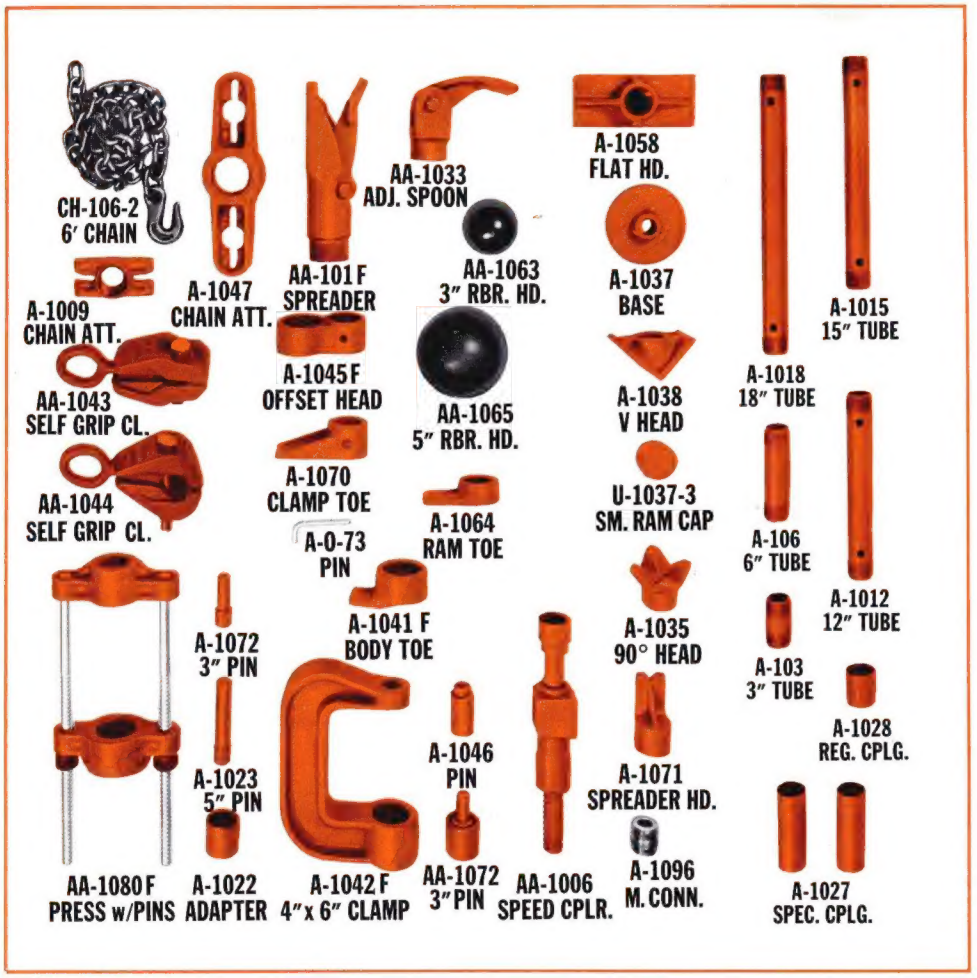
F-10	F-10A
A-13	A-13
B-10	B-10
= C-13	= C-13A



A-13 SET OF ATTACHMENTS

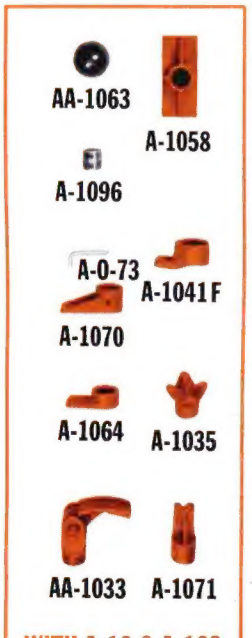
10 TON ATTACHMENTS

AA-1073 set includes all parts below. A-O-1073 connectors snap in to either end of tubing to save setup time and give extra support to junction points.

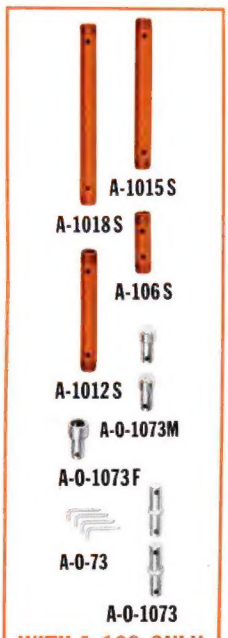


AA-1073 QUICK-SET

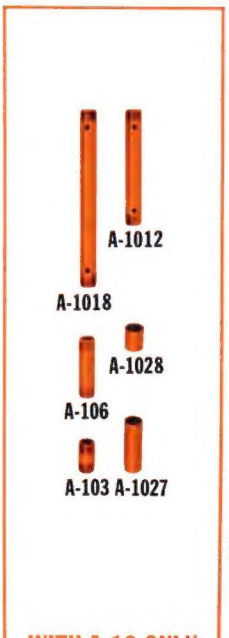
C-16S . . . 10 TON STARTER JacKit



WITH A-16 & A-16S



WITH A-16S ONLY



WITH A-16 ONLY

C-16S includes F-10 Jack with Quick-Coupler and ram cap, plus A-16S set of attachments with Quick-Set tubing pictured at left packed in B-11 Wood Chest. Chest is 27-1/2″ x 16″ x 8″ with locking hasp and separated compartment for storing F-10 Jack. These selected attachments include the minimum pieces needed for most jobs plus time saving Quick-Set tubing at a small investment.

C-16 includes F-10 Jack, A-16 set of attachments with threaded tubing shown at left and B-11 chest.

Easy to Figure:

F-10	F-10
A-16S	A-16
B-11	B-11
= C-16S	= C-16

Hein-Werner **PUSHMASTER**

20 TON HEAVY DUTY REPAIR KITS

F-20

F-20A

C-22 . . . 20 TON JacKit

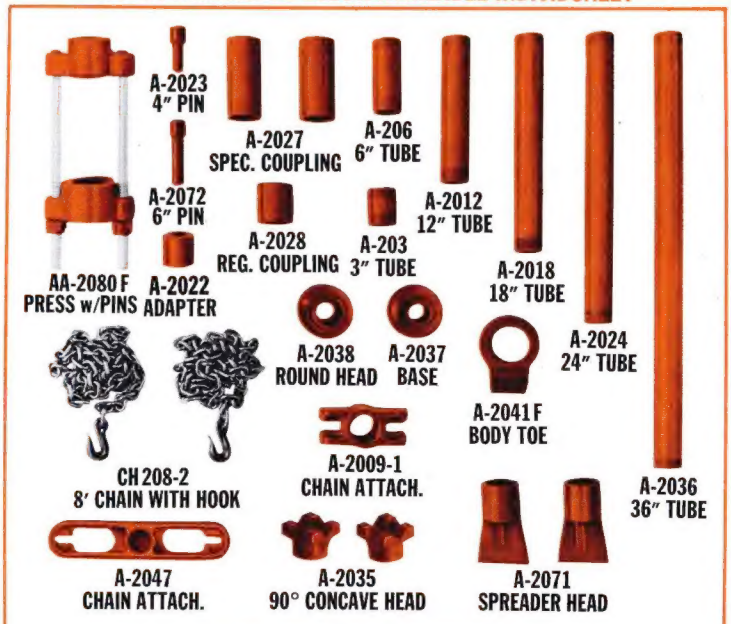
C-22 JacKit includes F-20 20 ton Jack with Quick-Coupler and ram cap, A-22 set of attachments and B-10 Steel Stand. This complete set of attachments powered by the F-20 jack meets the need for versatile, heavy duty equipment in frame repair shops, construction and general industry. B-10 Stand is 33" high, 18" wide and 30" long. All components illustrated may also be purchased individually or in any combination desired.

C-22A JacKit includes F-20A Jack with FP-25H Air-Hydraulic Pump in place of hand pump.

Easy to Figure:

F-20	F-20A
A-22	A-22
B-10	B-10
= C-22	= C-22A

ALL ATTACHMENTS BELOW AVAILABLE INDIVIDUALLY



A-22 20 TON ATTACHMENTS

C-23-1 . . . 20 TON STARTER JacKit

C-23-1 JacKit includes F-20 Jack with Quick-Coupler and ram cap and A-23-1 set of attachments packed in B-11 Wood Chest. These commonly used attachments are selected to provide the minimum equipment needed for many jobs at a small investment and additional attachments for more specialized work can be added as desired.

C-23A JacKit includes F-20A Jack with FP-25H Air-Hydraulic Pump in place of hand pump for faster operation.

Easy to Figure:

F-20	F20A
A-23-1	A-23-1
B-11	B-11
= C-23-1	= C-23A

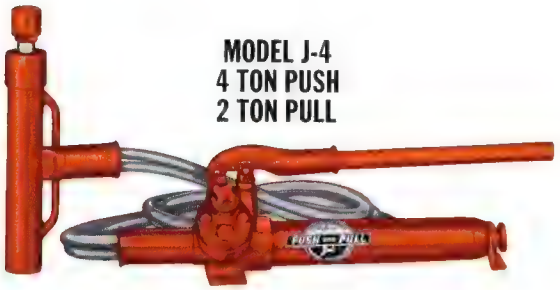
A-23-1 20 TON ATTACHMENTS

Hein-Werner PUSH AND PULL

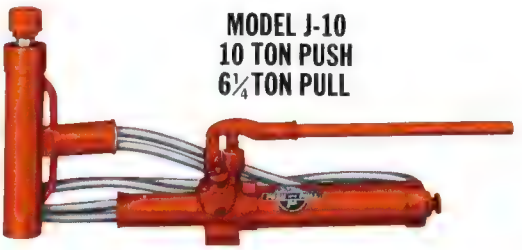
REMOTE CONTROL HYDRAULIC JACKS

Hein-Werner Push and Pull Jacks provide instant hydraulic push or pull action with one ram by merely turning the control valve to right or left. Pumps or rams operate in any position without becoming airbound since oil is always under pressure throughout the system. With attachments pictured on the following pages, these versatile units in 4, 10 or 20 ton capacities are favorites for body and fender work, frame straightening plus a variety of industrial and construction repair jobs.

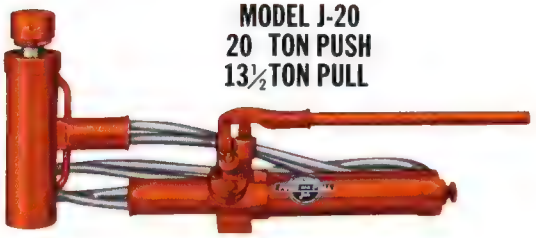
Pump and ram units identified in the specifications chart below can be purchased separately for special uses. Complete 10 and 20 ton jacks are also available with 3 1/2" gauge calibrated in 1 ton graduations. Black needle registers separate readings for Push and Pull. Red needle registers highest pressure reached (until reset).



MODEL J-4
4 TON PUSH
2 TON PULL



MODEL J-10
10 TON PUSH
6¼ TON PULL



MODEL J-20
20 TON PUSH
13½ TON PULL

J-10G 10 TON W/GAUGE
J-20G 20 TON W/GAUGE

SPECIFICATIONS								
Model	Tons Cap. (Push)	Tons Cap. (Pull)	Closed Ram Height	Extended Ram Height	Pump No.	Ram No.	Hose No. (6')	Jack Shipping Weight (lbs.)
J-4	4	2	10"	15"	UP-4	UR-4	U-4120	20
J-10	10	6¼	12½"	18½"	UP-10	UR-10	U-10120	36
J-20	20	13½"	12½"	17½"	UP-10	UR-20	U-10120	44

ALL HEIN-WERNER *PUSH and PULL* HYDRAULIC JACKS HAVE THESE FEATURES

1. Push and Pull with one ram saves time and multiplies types of work that can be done.
2. Protected by overload safety valve with positive ram travel stop.
3. Hoseguards at ram and pump protect hose and provide balanced grip for handling and positioning.
4. Cannot become airbound no matter what position ram or pump operated.
5. Push or Pull action controlled by simply turning valve to right or left.
6. All models use standard industry pipe thread sizes — 4 ton - ¾", 10 ton - 1¼", 20 ton - 2".
7. Threaded ends of rams are replaceable to reduce service cost if damaged.

4 TON REPAIR KITS

C-4S . . . 4 TON JacKit

C-4S JacKit includes J-4 Push and Pull 4 ton Jack, A-4S-1 set of attachments with Quick-Set tubing and B-4 Metal Chest. Convenient Push and Pull action using but one ram makes jobs simpler — faster. Quick-Set tubing cuts set up time to a minimum, helps to finish the job quicker and adds to shop profits. B-4 Steel Chest is 20" long, 9-3/4" wide and 7" high with hasp for locking.

Easy to Figure:

J-4	Jack
A-4S-1	Attachments
B-4	Chest
= C-4S	

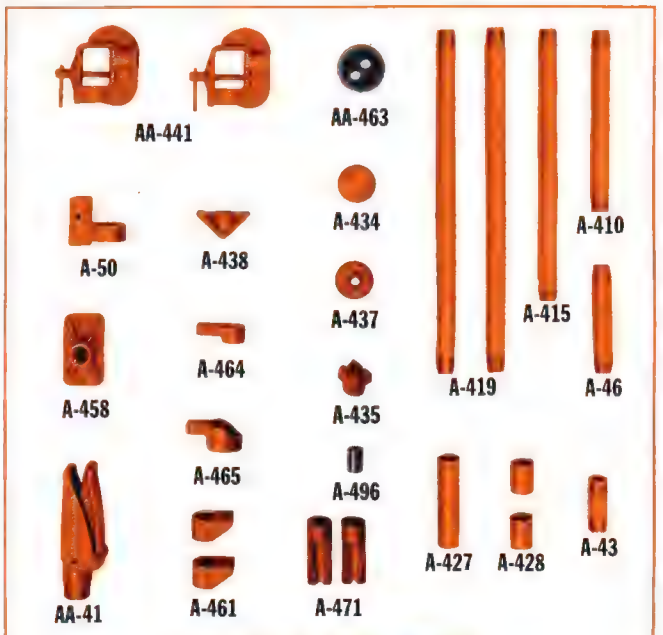
A-4S-1 SET OF ATTACHMENTS

C-4 . . . 4 TON JacKit

C-4 JacKit includes J-4 Push and Pull 4 ton Jack, A-4-1 set of attachments with threaded tubing and B-4 Metal Chest. Push and Pull action with the same ram saves time, makes jobs simpler and increases shop profits per job. Ram and pump can be used in any position without getting airbound. B-4 steel chest is 20" long, 9-3/4" wide and 7" high with hasp for locking.

Easy to Figure:

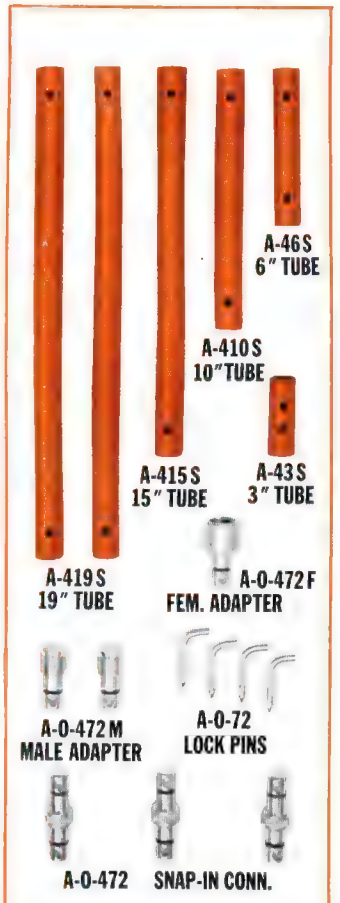
J-4	Jack
A-4-1	Attachments
B-4	Chest
= C-4	JacKit



A-4-1 SET OF ATTACHMENTS

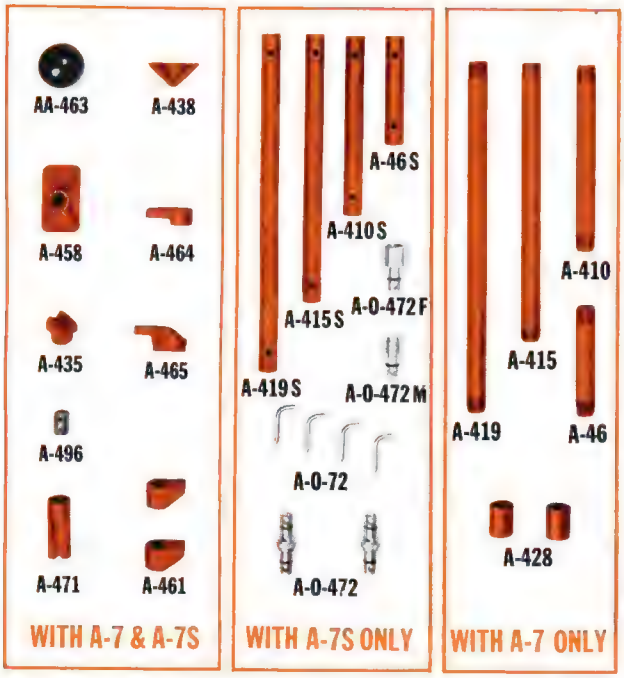
4 TON ATTACHMENTS

AA-472 set includes all parts pictured below. A-O-472 connectors snap in to save set up time and give extra support at junction points. Always insert pins for pulling operations.



AA-472 QUICK-SET

C-7S . . . 4 TON STARTER JacKit



C-7S JacKit includes J-4 Push and Pull 4 ton Jack and A-7S set of attachments with Quick-Set tubing. A real economy package of basic attachments most used in body shops. Quick-Set tubing means faster set-ups and extra profit on every job. Additional items can be added as desired.

C-7 JacKit includes J-4 Push and Pull 4 ton Jack and A-7 set of attachments with threaded tubing. Provides the essentials at minimum cost and additional items can be added as desired.

Easy to Figure:

J-4	J-4
A-7S	A-7
= C-7S	= C-7

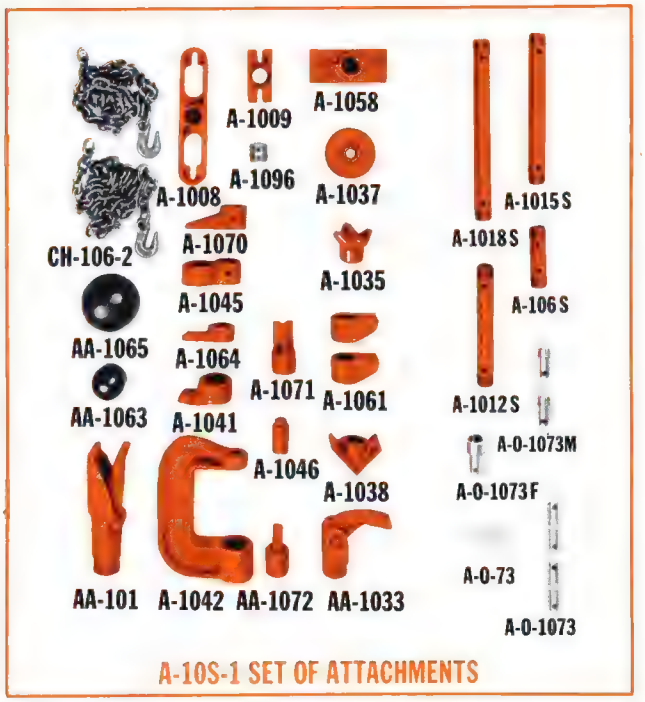
10 TON REPAIR KITS

C-10S-1 . . . 10 TON JacKit

C-10S-1 JacKit includes J-10 Push and Pull 10 ton Jack, A-10S-1 set of attachments with Quick-Set tubing and B-10 Stand. Quick-Set tubing permits faster set-ups to reduce job time and increase shop profits on every job. Push or pull action with one ram also adds to flexibility and time saved.

Easy to Figure:

J-10	Jack
A-10S-1	Attachments
B-10	Stand
= C-10S-1	



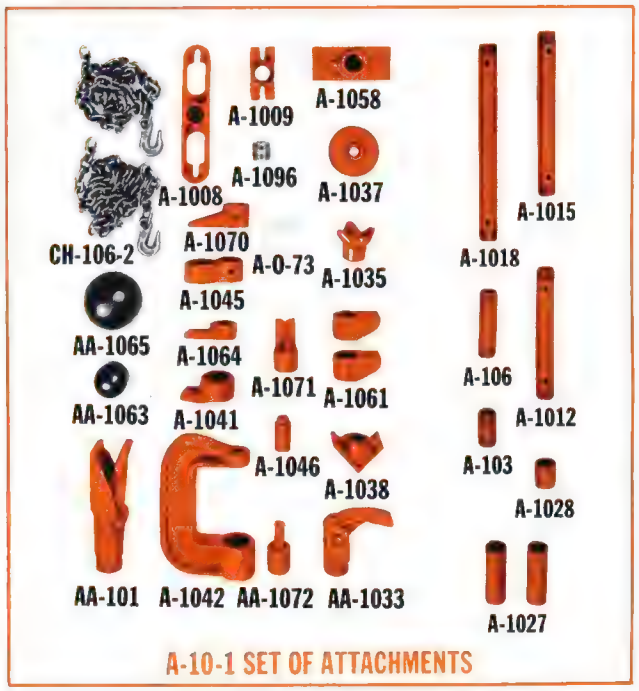
A-10S-1 SET OF ATTACHMENTS

C-10-1 . . . 10 TON JacKit

C-10-1 JacKit includes J-10 Push and Pull 10 ton Jack, A-10-1 set of attachments with threaded tuing and B-10 Stand. Push and Pull action with the same ram makes for greater flexibility and adds to profits by simplifying set-ups and reducing job time. B-10 Stand is 33" high, 18" wide and 30" long.

Easy to Figure:

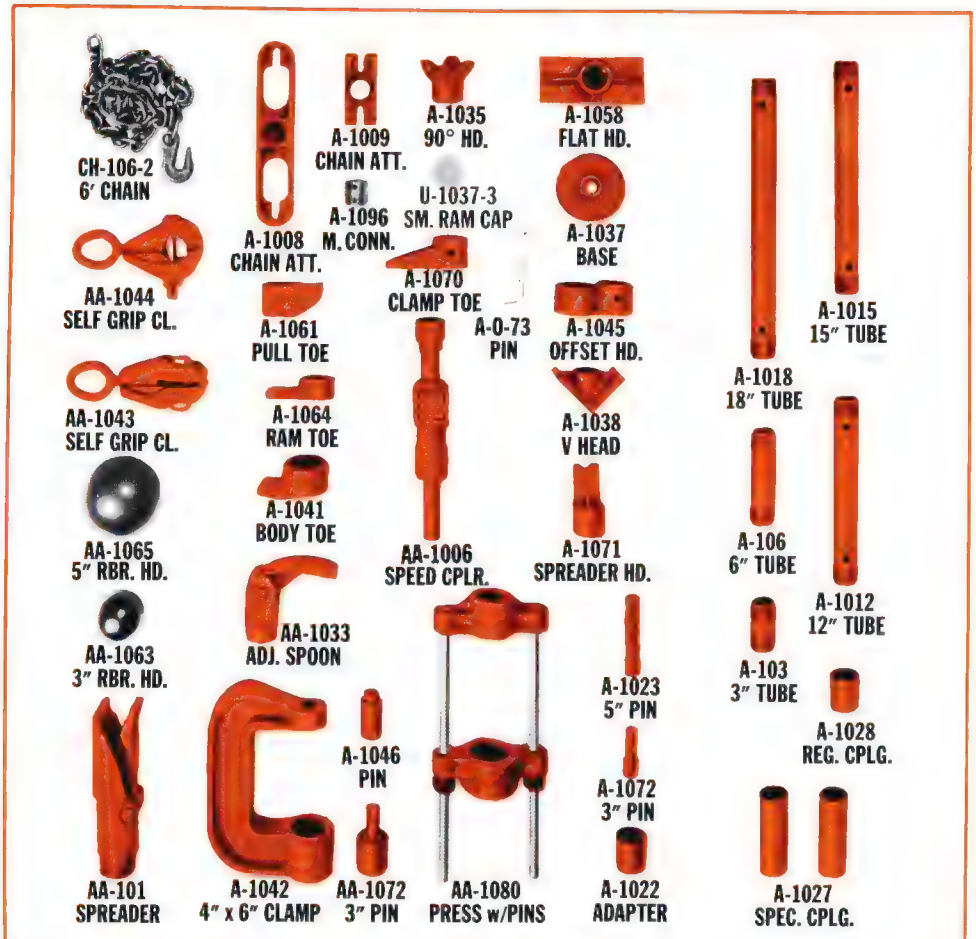
J-10	Jack
A-10-1	Attachments
B-10	Stand
= C-10-1	JacKit

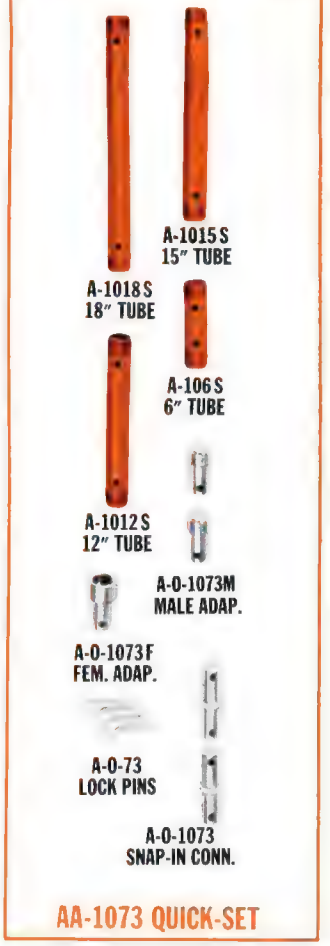


A-10-1 SET OF ATTACHMENTS

10 TON ATTACHMENTS

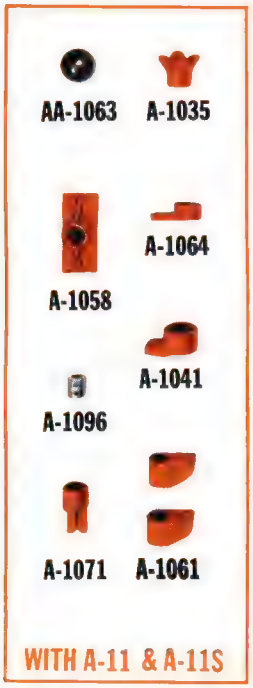
AA-1073 Set includes all the parts below. A-O-1073 connectors snap in to save set-up time and give extra support. Always insert pins for pulling operations.





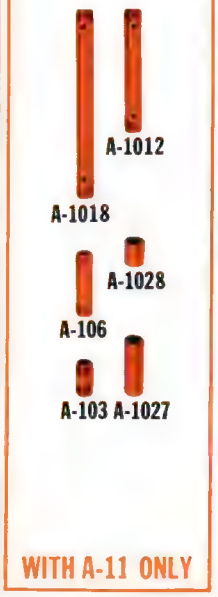
AA-1073 QUICK-SET

C-11S . . . 10 TON STARTER JacKit



WITH A-11 & A-11S

WITH A-11S ONLY



WITH A-11 ONLY

C-11S JacKit includes J-10 Push and Pull 10 ton Jack, A-11S set of attachments with Quick-Set tubing packed in B-11 Wood Chest. This practical set matches the type of work in body and frame repair and has the added advantage of reduced job time with Quick-Set tubing. B-11 chest has hasp for locking.

C-11 JacKit includes J-10 Jack, A-11 attachments with threaded tubing and B-11 Chest. This economy set offers outstanding advantages at a small investment.

Easy to Figure:

J-10	J-10
A-11S	A-11
B-11	B-11
=C-11S	= C-11

20 TON HEAVY DUTY REPAIR KITS

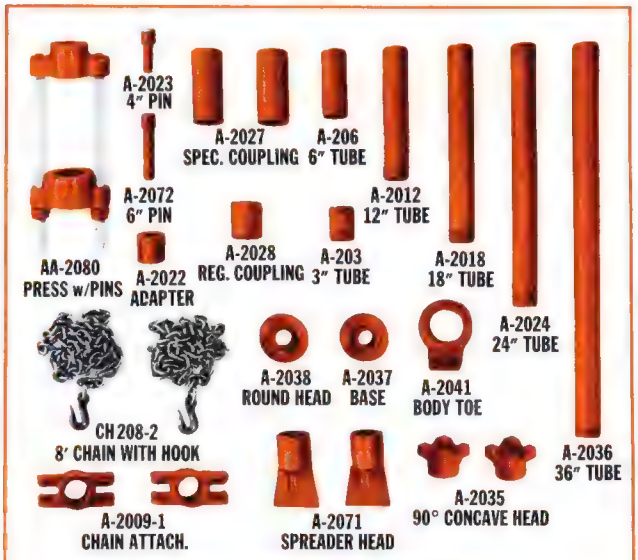
C-24 . . . 20 TON JacKit

C-24 JacKit includes J-20 Push and Pull 20 Ton Jack, A-24 set of attachments and B-10 Metal Stand. This complete set designed for use with the rugged J-20 provides the necessary power and versatility for frame repair, construction, heavy machinery maintenance and general industry needs. All components illustrated can be purchased individually or in any combination desired.

Easy to Figure:

J-20	Jack
A-24	Attachments
B-10	Stand
= C-24	JacKit

ALL ATTACHMENTS BELOW AVAILABLE INDIVIDUALLY



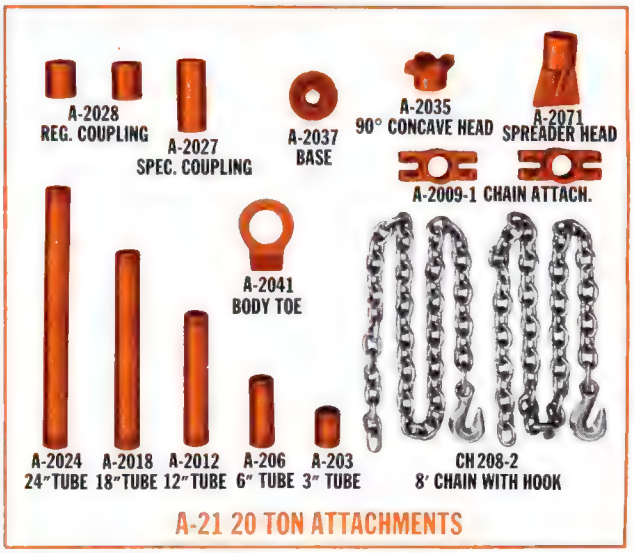
A-24 20 TON ATTACHMENTS

C-21 . . . 20 TON STARTER JacKit

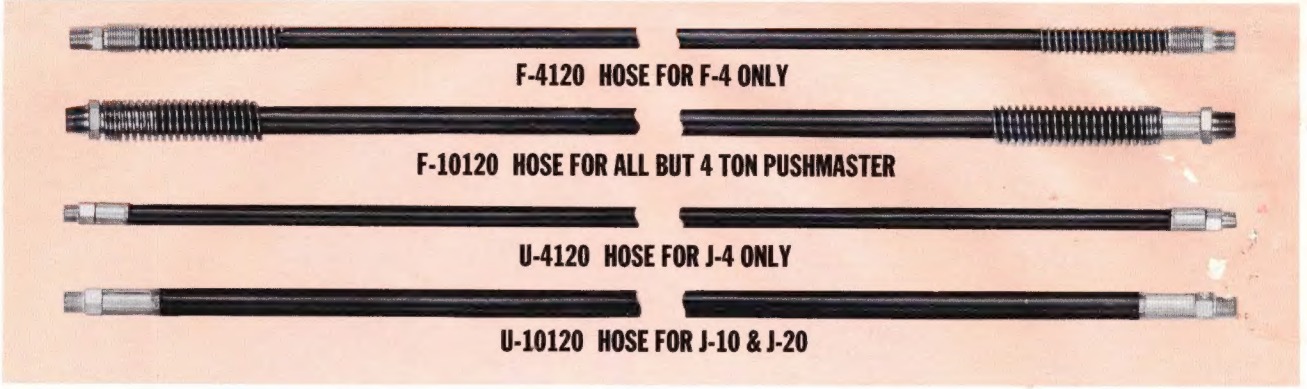
C-21 JacKit includes J-20 Push and Pull 20 ton Jack and A-21 set of attachments packed in B-11 Wood Chest. These attachments have been carefully selected to provide the basic equipment most often used for industrial maintenance and servicing highway and construction machinery. B-11 is 27-1/2" x 16" x 8" and is equipped with hasp for locking. Extension tubes are extra heavy walled to withstand severe usage. Varied sizes provide the right lengths for every job.

Easy to Figure:

J-20	Jack
A-21	Attachments
B-11	Chest
= C-21	JacKit

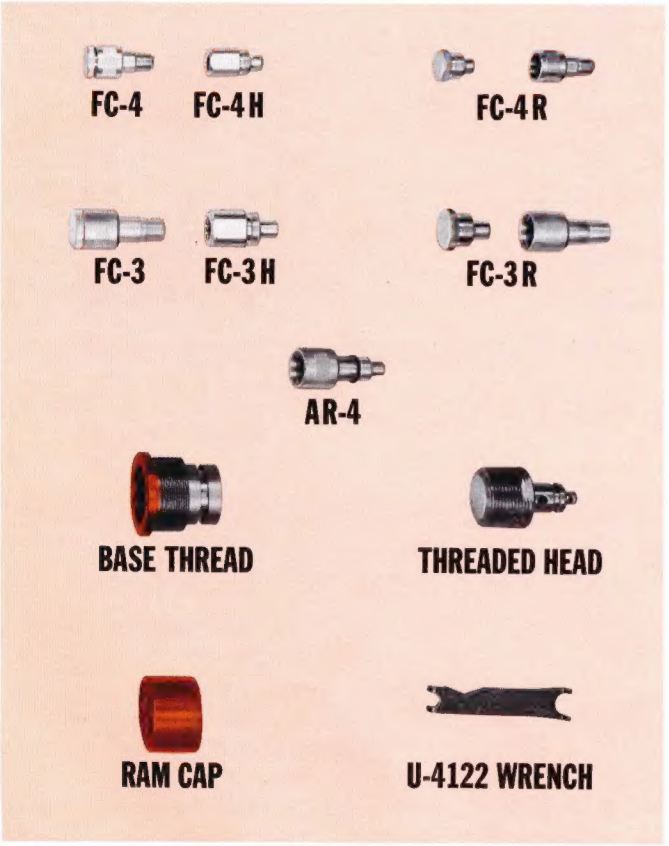


A-21 20 TON ATTACHMENTS



F-10120 Hose with wire guards for 10 ton or larger combinations. Normally furnished less coupler in 6′ lengths. When desired with FC-3H Hose Half of Quick Coupler, order as F-10120C. Special lengths available.

F-4120 Hose with wire guards for 4 ton Pushmaster series. Normally furnished less coupler in 6′ lengths. When desired with FC-4H Hose Half of Quick Coupler, order as F-4120C. Special lengths available.



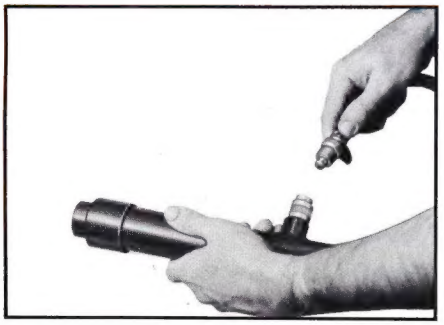
FC-4 Complete Quick Coupler with 1/4" pipe threads to fit 4 ton Pushmaster only. If either half only is desired, specify FC-4H Hose Half or FC-4R Ram Half which includes F-401 Cap.

FC-3 Complete Quick Coupler with 3/8" pipe threads for all 10 ton and larger sizes. To order either half only, specify FC-3H Hose Half or FC-3R Ram Half which includes F-1001 Cap.

AR-4 Reducer-Adapter is required to couple FP-25H Air-Hydraulic pump to 4 ton rams.

Top and bottom thread connections are replaceable on Pushmaster and Push and Pull rams in the capacities shown below. This avoids replacing entire ram, should threads be damaged.

PUSHMASTER THREAD CONNECTIONS			
Capacity	**Ram Cap No.**	**Threaded Head No.**	**Base Thread No.**
4 ton	U-437-1	F-447-2	F-446
10 ton	U-1037-2	F-1047-1	F-1046-1
20 ton	U-2037-1	F-2047	— — —
PUSH AND PULL THREAD CONNECTIONS			
4 ton	U-437-1	U-447	U-446
10 ton	U-1037-2	U-1047	U-1046
20 ton	U-2037-1	U-2047	U-2046



All Pushmaster jacks and Rams are equipped with detachable Quick Couplers

HEIN-WERNER HYDRAULIC JACK OIL

Has special additives to inhibit foaming and rust formation on internal parts. Never use brake fluid or liquid with alcohol base in any hydraulic unit.

MODEL MP-27A-1 ELECTRIC MOTOR PUMP

Model MP-27A-1 provides a steady flow of power to speed ram operations. Connects to Pushmaster rams by Quick coupler on hose. Ideal for multiple hook ups.

Driven by 1 H.P., single phase, 60 cycle, 115/230 volt, 1750 R.P.M. AC motor. Equipped with swivel casters, 6' Hose and 3/8" Quick Coupler.

SPECIFICATIONS					
Model	H.P. of Motor	Oil in Reservoir	1,000 P.S.I. (Continuous)	5,000 P.S.I. (Continuous)	10,000 P.S.I. (Intermittent)
MP-27A-1	1	*4 Qts.	60 cu. in./min.	50 cu.in./min.	45 cu. in./min.

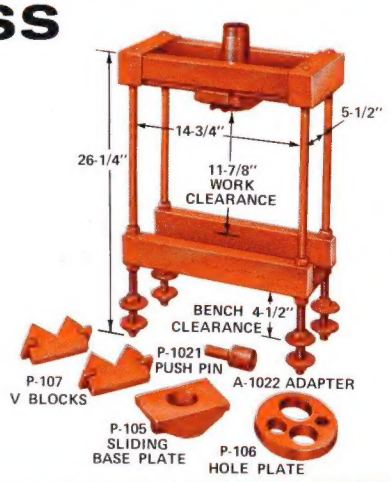
*May be increased to 6 qts., if desired.

Specify H-W Motor Pump Oil for use in Model MP-27A-1

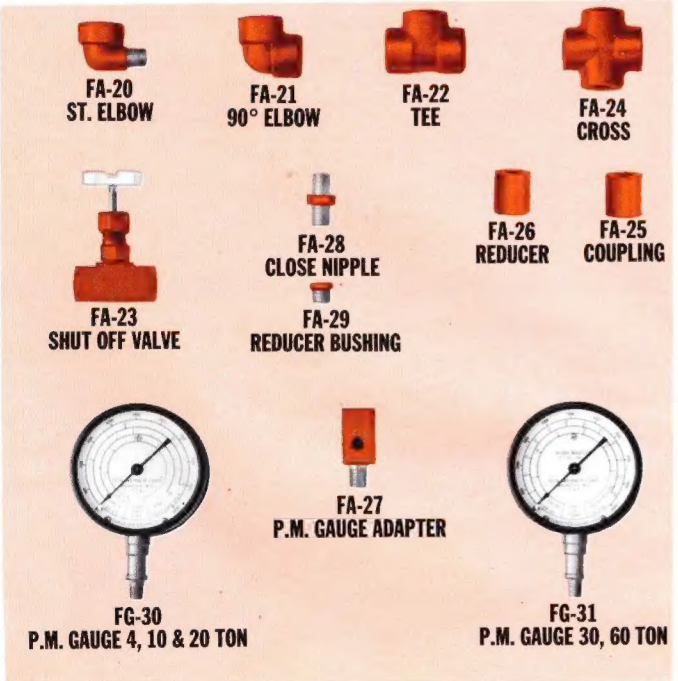
BP-10F 10 TON BENCH PRESS

Furnished complete with adapter, sliding base plate, V blocks and hole plate for use with F-10 Pushmaster and J-10 Push and Pull 10 ton Jacks. Internal spring in F-10 retracts ram automatically when pressure is released. J-10 is not equipped to retract ram automatically because of its double-acting design.

Valuable for straightening shafts, pressure testing materials, inserting bushings and varied press jobs.



HYDRAULIC FITTINGS & GAUGES



FA-20 STREET ELBOW — 3/8" male and female threads.

FA-21 90° ELBOW — Has 3/8" female threads.

FA-22 TEE — Has three 3/8" female pipe thread outlets.

FA-23 SHUT-OFF VALVE — 3/8" female threads. Permits flow control or complete shut off.

FA-24 CROSS — Has four 3/8" female threads.

FA-25 HOSE COUPLER — Has 3/8" female threads.

FA-26 REDUCER BUSHING — 3/8" to 1/4" female threads.

FA-27 GAUGE ADAPTER — Has 3/8" male threads and 1/4" pipe tap.

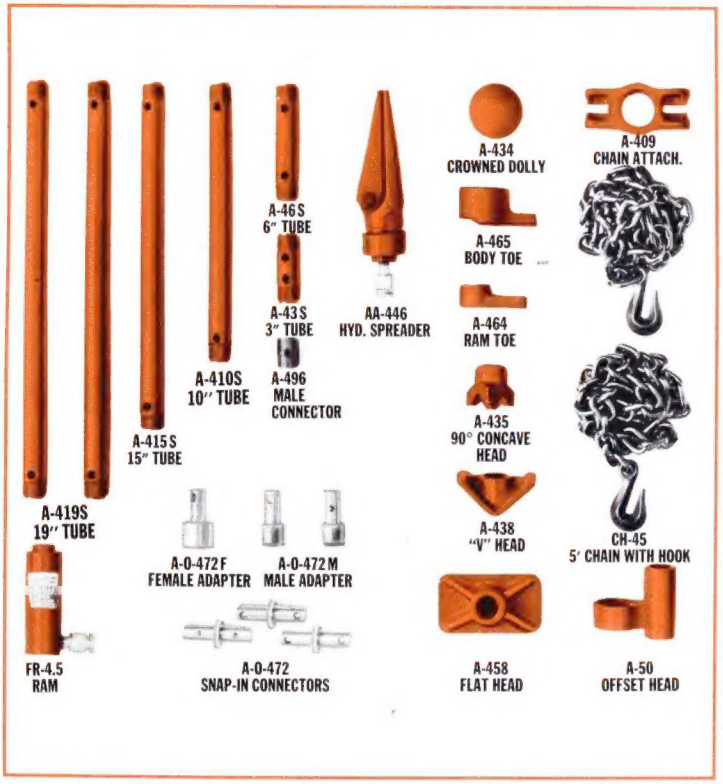
FA-28 CLOSE NIPPLE — 2" long with 3/8" male threads.

FA-29 REDUCER BUSHING — 3/8" male and 1/4" female threads.

FG-30 PUSHMASTER GAUGE — Has 1/4" pipe thread and 3 1/2" dial. Registers both P.S.I. and pounds load on 4, 10 and 20 ton Pushmaster rams. P.S.I. readings range from 0 to 10,000 in 250 P.S.I. divisions. Load readings are in 500 lb. increments for 4 ton; 1000 lbs. for 10 ton and 2000 lbs. for 20 ton.

FG-31 PUSHMASTER GAUGE — Has 1/4" pipe thread and 3 1/2" dial. Registers P.S.I. and pounds load on 30 and 60 ton Pushmaster Rams. P.S.I. readings are in 250 P.S.I. divisions. Load readings are in 2000 lb. increments.

RK-2 . . . 4 TON DELUXE RESCUE KIT



Model RK-2 Hydraulic Rescue Kit includes F-4 Pushmaster 4 ton Jack and pictured attachments packed in RK-10 Metal Chest. The components in this set were planned and engineered in co-operation with safety experts to provide the proper type components for efficient rescue work. Tools are clipped in place in full view and easy reach to expedite emergency use.

PM-150A PUSHMASTER DISPLAY

This attractive, compact stand displays fast moving Pushmaster components in 4 ton size only. Takes just 24" x 16" of floor space and is also equipped for wall mounting if desired.

LIST OF MATERIAL DISPLAYED

1 — F-4 Pushmaster Jack
1 — A-458 Flat Head
2 — A-435 Concave Head
1 — AA-463 3" Rubber Head
1 — A-464 Ram Toe
1 — A-465 Body Toe
2 — A-43S 3" Q. Set Tubing
2 — A-46S 6" Q. Set Tubing
2 — A-410S 10" Q. Set Tubing
2 — A-415S 15" Q. Set Tubing
4 — A-419S 19" Q. Set Tubing
2 — A-O-472M Male Adapter
1 — A-O-472F Female Adapter
5 — A-O-72 Lock Pin
3 — A-O-472 Snap-In Connector
1 — AA-443 Self Grip Clamp
1 — AA-446 Hydraulic Spreader
1 — FR-4.5-1 Short Ram
1 — Display Board

Hein-Werner

HEIN-WERNER SERVICE STATIONS

Alabama	Lift Parts Service Co., Inc., P.O. Box 176—409 North Broad St., Mobile 36601
Alabama	Hydraulic Service Co., 3000 Fourth Ave., S., P.O. Box 31062, Birmingham 35222
Alabama	Parsons Equipment Service Co., 529 Bibb St., Montgomery 36104
Alaska	Northern Hydraulics, 5773 Seward Hwy., Anchorage 99502
Arizona	Jacks, Incorporated, 1909 E. Washington, Phoenix 85034
Arkansas	Clark Hydraulic Service, 2901 Confederate Blvd., Little Rock 72206
Arkansas	Branum & Prock, 811 North "E St., Fort Smith 72901
California	Kimmerle Brothers, 2300 S. Hill St., Los Angeles 90007
California	Kimmerle Brothers, 226 11th St., San Francisco 94103
California	L & G Specialties, 524 Houston St., West Sacramento 95691
California	A-1 Hydraulics, Inc., 666D Stockton, San Jose 95126
California	Kimmerle Brothers, 337 M St., Fresno 93721
California	Sacramento Air & Hydraulic, 8122 Junipero Rd., Sacramento 95828
California	A-1 Hydraulics, 655 Peralta Ave., San Leandro 94577
California	Whaley Engineering Co., 2777 Newton Ave., San Diego 92113
California	Eggiman's Hydraulic Garage, 1112 E. Harding Way, Stockton 95205
California	Jack-X-Change, 1556 W. Embassy, Anaheim 92802
California	Sierra Hydraulics, 135 Myers St., Chico 95926
Colorado	Merrill Hydraulic Specialists, 12th and Acoma Sts., Denver 80204
Colorado	Hilliker Hydraulics, Inc., 734 Santa Fe, Denver 80204
Connecticut	A & L Eastern Hydraulics, Inc., 51 Farren Ave., New Haven 06513
Connecticut	John the Jack Man & Co., Rt. 190, Box 33, Stafford Springs 06076
Delaware	Delaware Valley Hydraulics, Rt. 7 and Churchmans Rd., Newark 19711
Florida	Broward Hydraulic Jack Service, 3811 Davie Blvd., Fort Lauderdale 33314
Florida	Southern Hydraulic Service, 1502 Columbus Dr., Tampa 33605
Florida	Central Hydraulic Service, 3423 LaSalle St., Tampa 33607
Florida	Tingen Hydraulic Service, 514 S. Edgewood Ave., Jacksonville 32205
Florida	Hydraulic Services, Inc., 1740 Barrancas St., P.O. Box 145, Pensacola 32502
Florida	Miami Equipment Repair Co., 1927 N.W. 36th St., Miami 33142
Florida	Metuchen Hydraulic Jack, 63 W. Illiana Ave., Orlando 32806
Florida	L. E. Grice Hydraulic Jack & Repair Service, 31 N. Westmoreland Dr., Orlando 32805
Florida	Dade Equipment Service, 961 W. 22nd St., Hialeah 33010
Georgia	Richmond Jack Repair, 2015 Savannah Rd., Augusta 30901
Georgia	Atlanta Hydraulic Repair Service, 1206 Sylvan Rd., S.W. Atlanta 30310
Georgia	Turner & Cole, 353 W. Peachtree St., N.E., Atlanta 30308
Georgia	B & R Hydraulic Service, Inc., 511 Roosevelt Ave., Albany 31702
Georgia	D. L. Lord, Sr. Hyd. & Air Jack Repairs, 3025 Broadway, Macon 31205
Hawaii	Air and Hydraulic Service, 842 Ilaniwai St., Honolulu 96813
Idaho	Twilann Hydraulics, P.O. Box 8186 106 E. 35th St., Boise 83707
Illinois	Bemis Hydraulic Jack & Equipment Co., 518-520 E. War Memorial Dr., Peoria 61614
Illinois	Servall Engineering Co., 3937 N. Kedzie Ave., Chicago 60618
Illinois	Rockford Jack Service, 2220 - 20th Ave., Rockford 61108
Indiana	ABC Specialty Co., 1075 Kenwood Ave., Fort Wayne 46803
Indiana	White-Evans Hydraulic Jack Service, 38 Shelby St., Indianapolis 46202
Indiana	Hydraulic Jack Service Co., 601 N. Fulton Ave., Evansville 47710
Indiana	Servall Engineering Co., 744 Sibley Ave., Hammond 46320
Indiana	Scotty's Hyd. Jack Service, 1204 N. Center St., Plymouth 46563
Indiana	Quality Equipment Service, 411 Newton St., Jasper 47576
Indiana	Miller Tool, 20480 Miller Rd., South Bend 46614
Iowa	Five Cities Tool Service, Inc., 743 Schmidt Rd., Davenport 52802
Iowa	Turner's Hydraulic Service, 3011 Sixth Ave., Des Moines 50313
Iowa	Douglas Machinery Co., 76 Jefferson, Des Moines 50314
Kansas	Hydraulic Equipment Co., 1311 S. McLean Blvd., Wichita 67213
Kansas	Ginder Hydraulic & Machine Shop, 1218 N. 9th St., Salina 67401
Kentucky	Queen Hydraulics, 1226 Rowan St., Louisville 40203
Louisiana	Power Tool Repair Service, Inc., 2025 Scenic Hwy. Baton Rouge 70802
Louisiana	Beerman Precision Machine Works, Inc., 2021 Thalia St., P.O. Box 53432, New Orleans 70153
Louisiana	Southern Hydraulics of Shreveport, Inc., 137 Lafayette, P.O. Box 7096, Shreveport 71107
Maine	Winne's Jack Service, 8 South St., Lubec 04652
Maine	Cove Hydraulic Service, Cove St. and Marginal Way, Portland 04101
Maine	N. H. Bragg & Sons, 92 Perry Rd., Bangor 04401
Maryland	Baltimore Hydraulics, Inc., 700 E. 25th St., Baltimore 21218
Massachusetts	Hydraulic Equipment Repair, 23 Sprucewood Rd., Billerica 01821
Massachusetts	Olive Hydraulic Service, 15 Olive St., Greenfield 01301
Massachusetts	Leos Equipment Service, 120 Front St., Holyoke 01040
Massachusetts	Somerset Jack Company, 181 Pearl St., Somerville 02145
Massachusetts	Tedesco Bros., 37 Union St., Holbrook 02343
Michigan	Hydraulic Service, 21251 Ryan Rd., Warren 48091
Michigan	Hydraulic Equipment Service Co., 1401 N. Alpine, Grand Rapids 49504
Michigan	Rogers Machine Co., 616 N. Water St., Bay City 48706
Michigan	Burr E. Steffey Co., 14947 W. Michigan, Marshall 49068
Michigan	B. K. Hydraulic Jack Service, Standish Ave., Petoskey 49770
Minnesota	Hydraulic Jack & Equipment Service Co., 2601 Aldrich Ave., S., Minneapolis 55408
Mississippi	Dixie Hydraulic Service, 1640 S. Gallatin St., Jackson 39204
Missouri	Central Hydraulic Service, 3101 Washington, St. Louis 63103
Missouri	Harry L. Nolte Co., 1221 Clay, North Kansas City 64116
Montana	Falls Hydraulic Jack Service, 307 Third Ave., Great Falls 59401
Montana	Toledo Scales & Service, 2402 Minnesota Ave., Billings 59101
Nebraska	Turner's Hydraulic Service, 1716 Vinton St., Omaha 68108
Nevada	Borgman Repair Service, 1425½ E. 4th St., Reno 89502
New Hampshire	Hydraulic Jack Service, Gilsum Rd., Keene 03431
New Hampshire	Manchester Hydraulic Co., 341 Taylor St., Manchester 03103
New Jersey	Hydrair, Inc., 615 Union Ave., Union Beach 07735
New Jersey	Metro Hydraulic Jack Company of New Jersey, 52 Elm St., Newark 07105
New Jersey	Industrial Hydraulics, Inc., 33 W. Inman Ave., Rahway 07065
New Mexico	Pound Safety Service Corp., 412 Marble, N.W., Albuquerque 87101
New York	Ace Hydraulic Service, 1201 Burnet Ave., Syracuse 13203
New York	Albany Hydraulic & Lube Service, 275 Columbia Turnpike, Rensselaer 12144
New York	Buffalo Hydraulic Jack Service, 488 Walden, Buffalo 14211
New York	Buffalo Hydraulic Jack Service, 629 Ramona St., Rochester 14615
New York	Gemco Garage Equipment Corp., 153-75 Rockaway Blvd., Jamaica 11434
New York	Atlas Hydraulic Co., Inc., 41 Hicks St., N. Lindenhurst 11757
New York	Metro Hydraulic Jack Co., 846 E. 52nd St., Brooklyn 11203
North Carolina	Charlotte Hydraulic Service, P.O. Box 3252, 2133 S. Tryon, Charlotte 28203
North Carolina	Power Tool Service, Inc., 867 Huffman St., Greensboro 27405
North Carolina	Power Tool Service, Inc., 1017 Ivy Ave., P.O. Box 4129, Winston-Salem 27101
Ohio	Carl and Gene's Hydraulic Service, 4036 N. Detroit Ave., Toledo 43612
Ohio	Eureka Tool and Hydraulic Service Inc., 3818 N. Bend Rd., Cincinnati 45211
Ohio	Knox Equipment Service, 344 S. Main, Dayton 45402
Ohio	Ohio Hydraulic Jack Service, 3826 Payne Ave., Cleveland 44114
Ohio	Ohio Hydraulic Service of Columbus, 24 N. Grubb St., Columbus 43215
Ohio	Salem Equipment Repair Co., 505 Salem Ave., Dayton 45406
Oklahoma	Agnew Hydraulic, 2305 S. Agnew, Box 82713, Oklahoma City 73108
Oklahoma	Hydraulic Equipment Co., 515 S. Broadway, Oklahoma City 73125
Oklahoma	Mac's Hydraulic Jack Service, 2108 E. 11th St., Tulsa 74104
Oklahoma	Hydraulic Equipment Co., 2423 E. Admiral Blvd., Tulsa 74110
Oregon	Equipment Service, 1204 N.W. Glisan, Portland 97209
Oregon	Karn Repair Service, Inc., 1215 S.W. 16th Ave., Portland 97205
Oregon	Les's Hydraulic Service, 2550 5th Ave., W., Eugene 97402
Pennsylvania	Morrison Equipment Co., 1298 S. 28th St., P.O. Box 4097, Harrisburg 17111
Pennsylvania	Equipment Service Co., 1921 Callowhill St., Philadelphia 19130
Pennsylvania	Mac's Jack & Equipment Service, Inc., 121 Putman St., Pittsburgh 15206
Pennsylvania	Erie Jack Service, 1248 E. 21st St., Erie 16503
Pennsylvania	Charlie Hydraulic Jack Repair, 1309-11 Cedar Ave., Scranton 18505
Rhode Island	Tri-Power Sales & Service, 111 Pennsylvania Ave., Warwick 02886
South Carolina	Baldwin Bros. Air and Hydraulic Jack Service, 2132 Spruill Ave., Charleston 29405
South Carolina	J. W. Lewis and Co., 319 Exchange St., Spartanburg 29301
South Dakota	Midwest Jack Service, 910 W. Tenth St., Sioux Falls 57104
Tennessee	Hydraulic Jack Service Co., 1710 Market, Chattanooga 37408
Tennessee	Jack Flint & Son, 244 Jefferson, Memphis 38103
Tennessee	Jackson Bearing Co., 384 S. Royal St., Jackson 38301
Tennessee	Johnson and White Equipment Co., 1004 Gallatin Ave., Nashville 37206
Tennessee	Lubrication Equipment Service, 231 Dale Ave., Knoxville 37921
Tennessee	Hydraulic Services, Inc., 3108 Bellbrook Dr., Memphis 38116
Texas	Turk Equipment Maintenance Co., 1010 W. Third St., Austin 78703
Texas	A. J.'s Equipment, 2303 E. 11th St., Dallas 75203
Texas	Ace Equipment Repair, Inc., 3010 Canton, Dallas 75226
Texas	Dave Hill Wholesale Automotive, 410 S. Santa Fe, El Paso 79901
Texas	Hydraulic Equipment Service Co., 1021 N. San Jacinto St., Houston 77002
Texas	Hou-Tex Hydraulics, Inc., 3107 Leeland Ave., Houston 77003
Texas	Hydraulic Equipment Service, 408 Avenue "H", Lubbock 79401
Texas	Young's Equipment Service, 515 N. Hackberry St., San Antonio 78202
Texas	Sankey Equipment Co., 2005 Broadway, San Antonio 78215
Texas	Wesbrooks Hydraulic Equipment, 2012 Sheppard Access Rd., Wichita Falls 76304
Texas	Hydraulic Equipment Co., 1824 E. Lancaster, Ft. Worth 76103
Texas	French's Service & Repair, 412 S. Missouri, Weslaco 78596
Utah	Gustin Hydraulics, 151 W. Commonwealth, Salt Lake City 84115
Virginia	Hydraulic Service Co., 3104 Victory Blvd., Portsmouth 23702
Virginia	Moore's Jack and Equipment Service, 2406 N. Lombardy St., Richmond 23220
Virginia	Stultz Machine and Manufacturing Co., 1546 Brownlee Ave., S.E., Roanoke 24014
Virginia	D & S Repair Service, 20 S. Dove St., Alexandria 22314
Washington	Kiuss Brothers Co., 1311 W. Sprague, Spokane 99204
Washington	The Jack Shop, Inc., 409 Cedar, Seattle 98121
Washington	Yakima Hydraulic Co., 5306 W. Washington Ave., Yakima 98903
Washington, D.C.	Hydraulic Equipment Service Co., 1803 14th St., N.W., 20009
West Virginia	CCC Hydraulic Service, 1009 Central Ave., Charleston 25302
West Virginia	Mountaineer Industries, 1040 S. Chestnut St., Clarksburg 26301
Wisconsin	Hader Industries, 2100 S. Calhoun Rd., New Berlin 53151
Wisconsin	Mac's Hydraulic Parts and Service, 525 S. Broadway, Green Bay 54303

IN CANADA

Alberta	Northland Air Hydraulics, Ltd., 6210 88th St., Edmonton
British Columbia	Hydraulic Service and Equipment Co., Ltd., 102 E. Second Ave., Vancouver 10
Manitoba	Pritchard Engineering Co., Box 1740, 111 Bannister Ave., Winnipeg
Quebec	Canadian Trade Corp., 1505 Legendre St., W. Montreal 355
Saskatchewan	Western Hydraulics and Equipment Co., Ltd., 1607 St. Johns, Regina

PUERTO RICO	Velazquez Hyd. Service, San Felipe esq—Rincon No. 481, Sabana Llana, Rio Piedras
MEXICO	Distribuidora De Fabricas, S.A., P.O. Box 166, Torreon, Coah
BELGIUM	Ets. Noirhomme, Rue d'Angleterre 43-45, Brussels
DENMARK	E. Busch-Mollar A S-12, Sankt Kjelds Plads, DK-2100, Copenhagen
SWITZERLAND	Urania-Accessoires, Badenerstrasse 288 296 - Zurich
JAMAICA	Beckfords Auto Supplies, Ltd., P.O. Box 156, Kingston 5

GUARANTEE

Hein-Werner hydraulic Jacks and parts are guaranteed against defective materials and workmanship from date of original sale to user. The part or jack should be sent prepaid to our nearest official Service Station for inspection. A full and complete explanation of the complaint and proof of purchase date must accompany the returned item. Guarantee does not cover jacks worn out in service, damaged by overloading, misuse, accident or use of improper fluid. No other warranty (including but not limited to warranties of merchantability and fitness for purpose) expressed or implied, shall be deemed to exist.

Do not return jacks or units to factory. Send them prepaid to the nearest official service station for repair.

Hein-Werner

CORPORATION

WAUKESHA, WISCONSIN, U.S.A.

Litho in U.S.A. 5/73